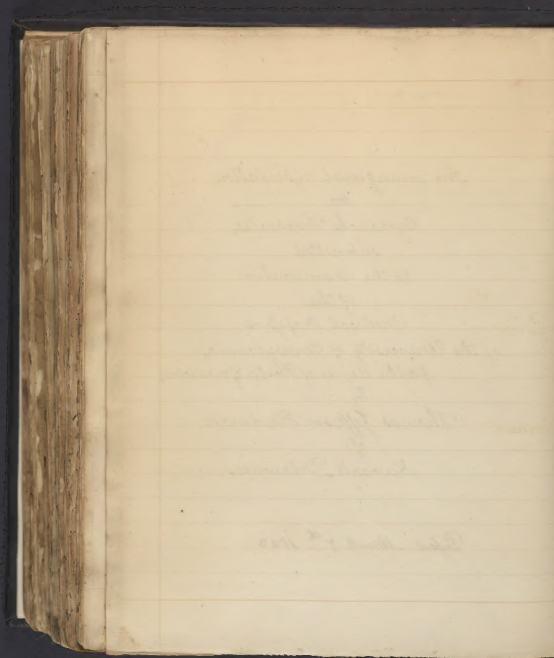
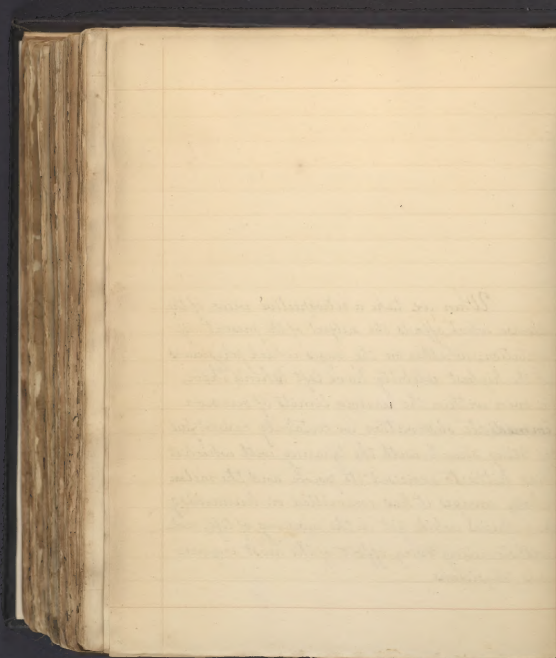


An inaugural dissertation  
on  
Cynanche Trachealis,  
submitted  
to the examination  
of the  
Medical Professors  
of the University of Pennsylvania,  
for the degree of Doctor of medicine;  
by  
Thomas Jefferson Herdman  
of  
Newark Delaware.

Passed March 7<sup>th</sup> 1823

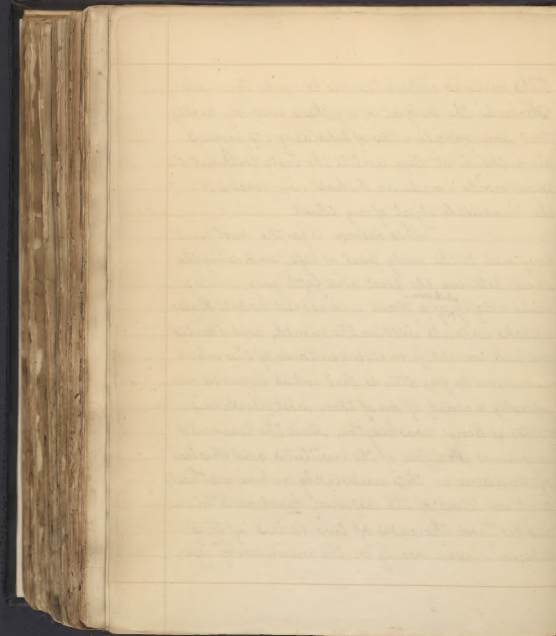


When we take a retrospective view of the disease, which affords the subject of the present dissertation; whether on the pages which physicians of the highest celebrity have left behind them, or even within the narrow limits of our own immediate observation, we certainly cannot fail of being struck with the tyranny with which it has hitherto exercised its power, and the melancholy ravages it has committed on hundreds of our species while yet in the morning of life, notwithstanding every effort of the most ingenious physicians.



The motives which led me to make Cynanche  
Trachealis the subject of my thesis, were my having  
had some opportunities of beholding its progress  
from the first stage untill the last. Without a  
more prolix exordium, I shall now proceed to  
the immediate object of my thesis.

This disease is for the most part  
confined to the early part of life, embracing the  
space between the first and fifth year, and at-  
tacks chiefly <sup>children</sup> of a florid and robust habit. It also  
attacks infants within the month, and adults  
are not exempt from it, an instance of this which  
can never be forgotten is that which deprived our  
country & world of one of their most illustrious  
citizens George Washington. And the learned &  
ingenious Professor of the institutes and Practice  
of medicine in this university, whose authority  
is at all times of the superior kind, related in  
his lectures the cases of two ladies of this  
city, who were nearly in the meridian of life,



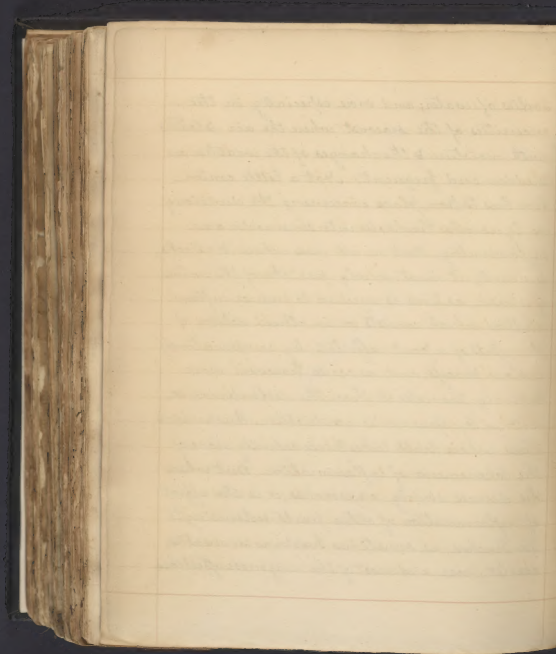
both of whom he attended in repeated attacks of croup. So strongly were they predisposed to it, that they scarcely ever escaped when exposed to the causes. The same liability has been transmitted to their children. Croup does not appear to be contagious, but it sometimes prevails epidemically. It seems peculiar to some families, and a child having been once attacked is very liable to its returns at uncertain periods, from any slight exposure to cold. It is known to be endemic to certain places, as many situations on the sea board are so particularly exposed to it, as almost to preclude the raising of children.

The application of cold seems to be the general cause which produces this disease, and therefore it occurs more frequently in the winter and spring when the vicissitudes of temperature are more common. It has been observed to be most prevalent in cold and damp situations, such as those exposed to air passing over large

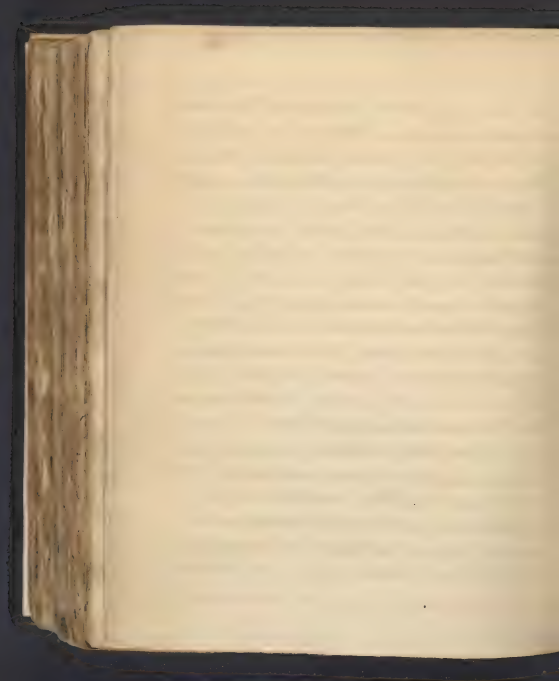




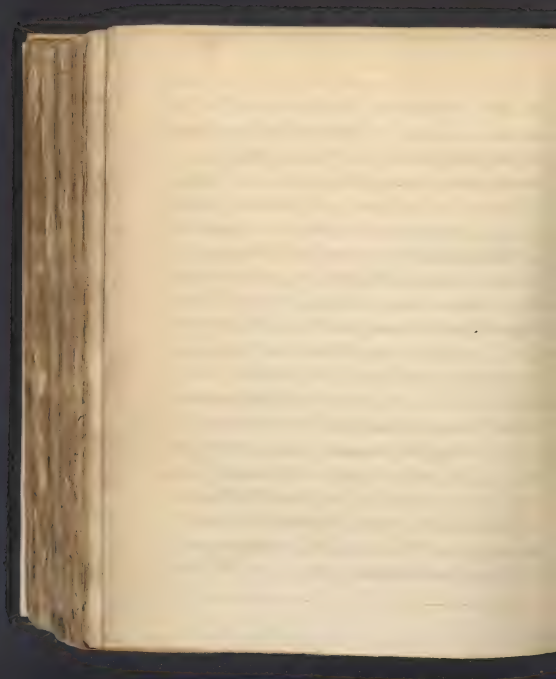
bodies of water; and more especially in the vicinities of the seacoast where the air is loaded with moisture & the changes of the weather are sudden and frequent. Not a little contention has taken place concerning the division of *Cynanche Trachealis* into spasmodic and inflammatory. But in all cases where it attacks suddenly it must surely partake of the nature of spasm, as time is required to induce inflammation which consists in an altered action of the vessels of a part affected, by comparatively a slow process; and no cause however more rapidly promotes it than the disturbance occasioned by spasmodic constriction. Inspections shew where death takes place rapidly none of the phenomena of inflammation. But where the disease slowly approaches, or is the effect of inflammation of other parts extending to the Trachea, as sometimes happens in measles, scarlet fever and most of the anginose affections,



then it is of a contrary character. The disease generally comes on in the evening, after the patient has been much exposed to the weather during the day, and often after a slight catarrh of some days standing. At first his voice is observed to be hoarse, he appears dull drowsy and inactive. His illness does not prevent him from sleeping, but soon he wakes up with a most unusual cough rough and stridulous which is peculiar to the disease, and has been compared to the sound resembling the crowing of a cock. Every fit of coughing agitates him very much, his face becomes flushed & swelled, his eyes bloodshot, a general tremor takes place, and there is a kind of convulsive endeavour to renew respiration at the close of each fit. There is constant danger of suffocation, a quick irritated pulse, and an unusual degree of restlessness and anxiety, the child will not remain long in one position,



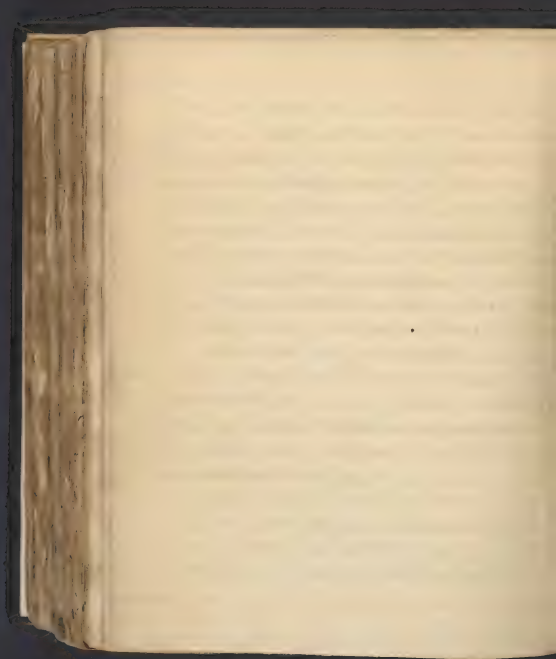
his skin burns and he has much thirst, it  
whines and cries and tosses about, and seems  
to be excessively uneasy without suffering any  
positive pain, cases of this nature are proba-  
bly dependant on spasms, and terminate fatally  
in a very short time where relief is not afforded.  
In this disease as in most of the Phlegmasiae,  
however alarming the other symptoms of fever,  
there is seldom any delirium. A degree of coma  
frequently supervenes. death sometimes appra-  
ches in a different way than from the former,  
by profuse sweats and fainting fits. The  
ceasing of the cough is to be ranked among  
the fatal symptoms, since its absence can  
only be attributed increasing insensibility, &  
deprives the patient of the chief means of remo-  
ving the morbid secretion from the Trachea  
which has taken place. The breathing now  
becomes small & hurried, the face assumes a  
livid and cadaverous appearance, the pulse



flutters & the extremities become cold which points out that death is at hand; sometimes it will destroy the child by suffocation, induced either by spasm affecting the muscles of the glottis, or by a quantity of matter blocking up the bronchiae; but when it terminates in health it is by a resolution of the inflammation, by a cessation of the spasm, by a relief to the dyspnoea and the voice becoming natural, with a copious and free expectoration of the matter exuding from the Trachea.

The disease has been known to terminate fatally in twenty four or forty eight hours, an instance of which fell under my observation, the child was taken ill on Saturday between the hours of four and six o'clock P.M. and died the next day at about eleven A.M.

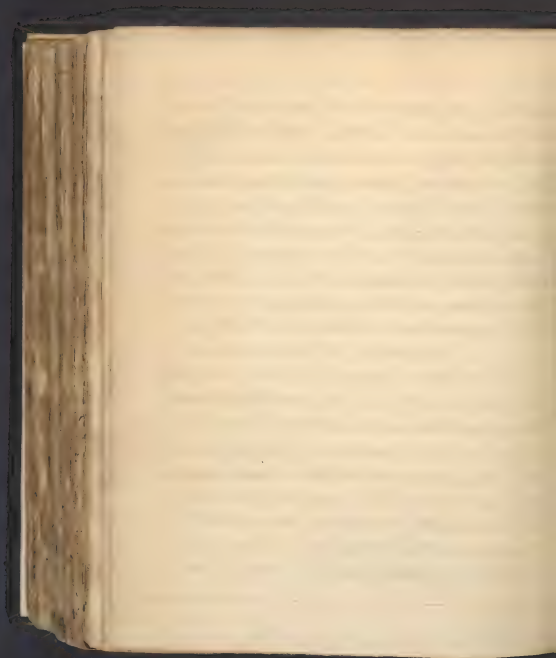
Dissections reveal to us slight marks of inflammation of the larynx, with more or less of mucus such as is formed by most all





secreting surfaces; the lungs are not unusually found in a healthy state, but in some instances they are inflamed, occasionally they are found full of dark blood & serum, also a quantity of pus is met with, and in tracing the bronchia throughout their minute ramifications, they are usually found filled with mucus, and Burserius tells us they assume all the appearances observed after Pneumonia, as adhesions to the Pleura.

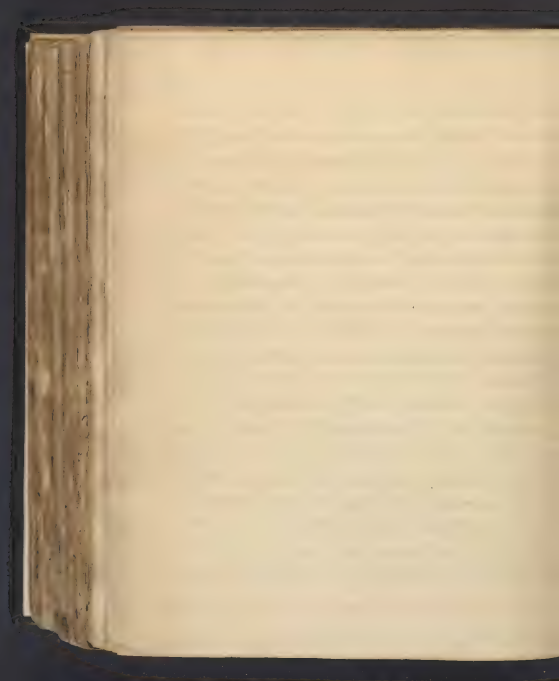
Respecting the preternatural membrane found sometimes lining and slightly adhering to the trachea, from the interposition of pus like matter between it and its surface; which is spoken of by different authors, there is no doubt that it does occasionally exist when the physician has not been called in at the first stage, and where the lancet and other depleting measures have not been very freely used. In *prosa* its



existence we have the authority of that excellent writer Cheyne, which is corroborated by Dr. Bard of New-York, who informs us that he has commonly observed in those cases, which he examined, that the membrane extended into the Bronchia as well as the Trachea, he also states that the disease is not even limited to the Trachea & Bronchia, but the lungs throughout their whole substance to a certain degree participate in the affection, insomuch that he has seen those organs considered so coarse and solid, that they exhibited in their appearance a great resemblance to the firm structure of the liver, instead of the loose and spongy texture in which they naturally exist. From the appearances found on dissection, and the symptoms which attend the disease there can be no doubt, but that it is an inflammatory affection of the mucous membrane of the Trachea, Larynx



and parts immediately connected therewith,  
attended with spasmodic contraction of the  
muscles. In the first stages of the disease,  
our most strenuous endeavours should be  
exerted to arrest the increased action which  
prevails, and for this purpose bleeding both  
general and local, emetics, purgatives &  
blisters are to be resorted to; therefore an emetic  
of Antimonium Tartarizatum or Precipuanha  
should be given, but the first is to be preferred  
on account of its dose being smaller, to aid the  
operation of the emetic the patient should be  
placed in a warm bath, it alone has been  
known to cure the disease. The medicine not  
operating or had the desired effect we should  
draw some blood, which will prevent the ef-  
fusion into the Bronchia, and repeat it and  
the bath. If the attack still continues with  
little or no abatement, we must resort to topi-  
cal depletion by leeches or cups. As the cups are

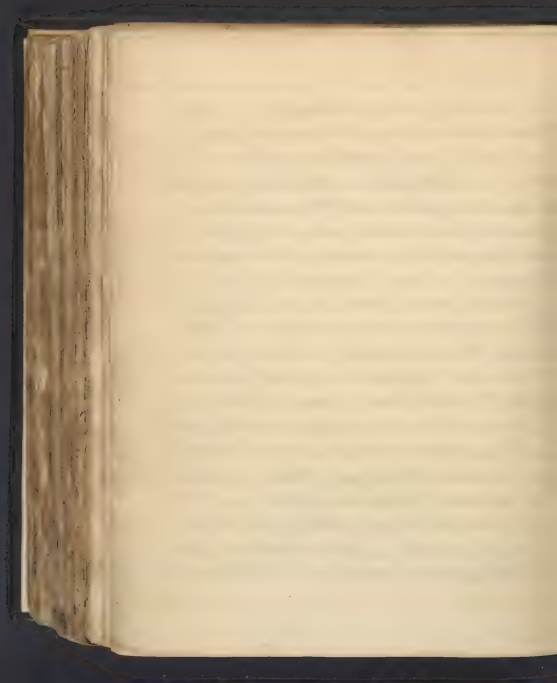


apt to impede respiration by pressure and suction when placed anteriorly they should be applied to the sides or back of the neck; much advantage may be derived from a sinapism or a blister applied over the throat. All these remedies failing and the symptoms becoming violent, bleeding ad delirium animi has been practised with the happiest effect, the moment syncope takes place the hoarseness, cough impeded respiration and fever will mostly yield. Throughout the whole course of the disease an antiphlogistic regimen will be necessary, and to keep the bowels open by some purgative, or common injection. The removal of the preceding symptoms indicate to us, that the disease has partially abated, and we should administer calomel in large doses in order to purge freely, and carry off the lingering symptoms. To relieve the cough, hoarseness and deficient expectoration, some of the expectorants



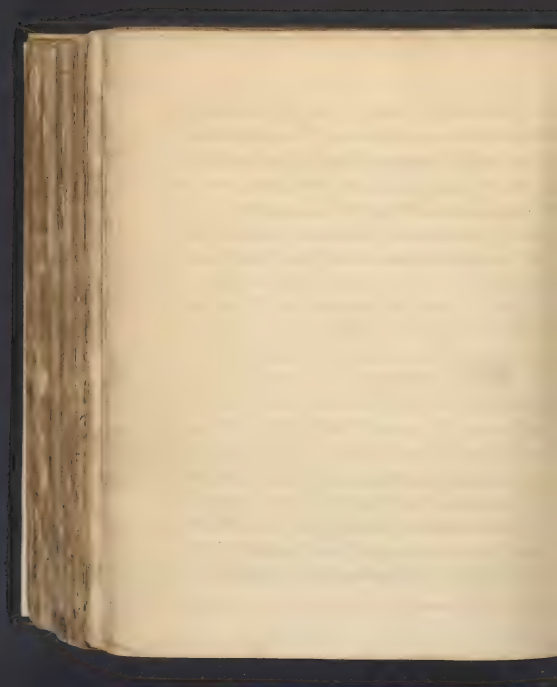


such as the diluent drinks of Gum arabic,  
Flaxseed tea or inhaling the vapour arising  
from warm water with the addition of  
ether or camphor, but a decoction of Polygala  
Senega is by far the best. The disease being  
permitted to continue it extends itself to the  
Bronchia, and the substance of the lungs become  
loaded with mucus or coagulated lymph or  
filled with blood. Now we have a difference  
of the symptoms, the lungs loaded and op-  
pressed, the pupil widely dilated attended  
with a wild haggard and ghastly counte-  
nance, the cheeks have a circumscribed flush  
with a mixture of lividness, respiration very  
laborious with a disturbed pulse. We are  
now to relieve the lungs of their oppression  
and reestablish a free circulation, and to  
affect this the warm bath and the sti-  
mulating emetics are to be employed such  
as Sulphas Zinci, Antimonium Tartarizatum

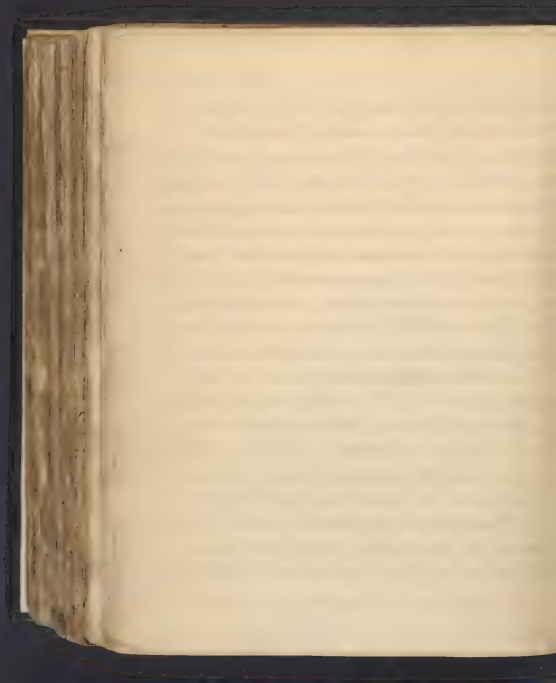


or Treacuanha, and by some the juice of the  
Allium sativum is preferred. The after treat-  
ment is to be accomplished by expectorants  
as the ozymel or vinegar of squills, Caskmate  
of ammonia, Polypala senega, or Doctor  
enecs hirs syrus, to whom we are indebted  
for many improvements in medicine.

Calomel has been very much extolled in  
croup by Doctor Kuhn late of this city, and  
by Doctor Hamilton of Edinburg, and  
according to their statements much benefit  
was derived from it in the generality of cases  
which fell under their immediate notice,  
but from the many trials of it by the med-  
ical <sup>men</sup> of this city, and the country, practition-  
ers it has proved at present to be inferior to  
the foregoing treatment. To get rid of the  
membrane which sometimes lines the bron-  
chia various means have been tried, the  
vitriolic emetics seems to me the best.

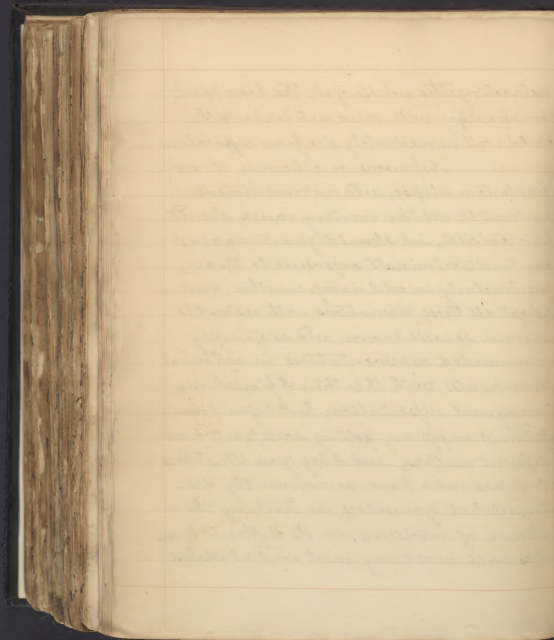


adapted to the case, first administering  
the *Sulphas Zincii* and afterwards the  
*Sulphas Cupri*, and in many cases it will  
be expelled; some have proposed and even  
carried into effect the operation of Laryn-  
gotomy as the last resource, and with suc-  
cess; but as the disease at this time has  
extended to the lungs, no relief in my opin-  
ion can be obtained from such an opera-  
tion, besides if the incision was even made  
and the forceps introduced, the membrane  
very rarely possesses that tenacity which  
would enable us to pull it out; for althou-  
gh the upper part of the hardened mem-  
brane might be extracted, still we should  
not be able to remove the fluid portion  
which fills the lower part of the trachea  
and bronchia, and which is one of the chief  
obstacles to respiration. And if we loosen  
the membrane from the Trachea without



extracting the whole of it, the loose part remaining will serve as a valve & the child will immediately die from suffocation.

As persons once having it are liable to a relapse, and as preventatives against it all the exciting causes should be avoided, we should guard against an indiscriminate exposure to the air, particularly in cold damp weather, and adopt all those precautions with respect to regimen so well known, and so strongly recommended as preventatives in catarrhal complaints. With this then I finish my inaugural dissertation; but before I close it I must confess my getting some parts from different authors; and I beg your illustrious Professors who have so eminently distinguished yourselves, in teaching the science of medicine, in its different branches will accept my most cordial wishes





for your happiness, and be assured  
that for the instructions I have received  
from your private as well as public  
lectures, and the many opportunities of  
improvement I have received thro<sup>g</sup> them  
while a student of this university, I shall  
ever retain a heart felt remembrance.

